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Staff Report

Infrastructure & Public Works

Report To: Committee of the Whole
Meeting Date: October 24, 2016
Report Number: CSPW.16.137
Subject: Water Section Operations Update – May to August 2016
Prepared by: Meg Boyd, Compliance & Efficiency Coordinator

A. Recommendations

THAT Council receive Staff Report CSPW.16.137 entitled “Water Section Operations Update – May to August 2016” for their information.

B. Overview

The purpose of this report is to keep Council apprised of the operation of the Town’s drinking water system for the period of May 1 to August 31, 2016.

C. Background

Ensuring the safety and quality of the Town’s drinking water system is not only the responsibility of the Water Operators who operate and maintain the system but also the Member of Municipal Council and Municipal Officials who exercise decision-making authority regarding the system. Town Council has requested regular updates. This Report continues to provide the information requested.

As mentioned in previous reports, the purpose of Attachment # 1 – Water Operations Update is to provide regular up-to-date information with regards to the status and operation of the Town’s drinking water system and to report on water quality issues for the period of September to December 2015.

Topics such as an overview of the Town’s drinking water were provided in the initial report, and as such will only be included intermittently to remind Council of the drinking water system components.

This report addresses:

- Raw, Treated and Distribution Water Quality
- Staff Training
- Drinking Water Quality Management Standard Update
- Water Treatment Plant Maintenance Summary

- Distribution System Summary
- Summary of Plant Flows
- Watermain Break Summary
- Incidents of Adverse Water Quality
- Water Quality Concerns / Resident Complaints

The attached report demonstrates that Water Operators continue to provide quality drinking water to its residents while ensuring long-term sustainability of the system through regular preventative maintenance programs.

D. Analysis

None

E. The Blue Mountains Strategic Plan

Goal #5: Ensure Our Infrastructure is Sustainable

F. Environmental Impacts

None

G. Financial Impact

None

H. In consultation with

John Caswell, Manager of Water & Wastewater Services

I. Attached

1. Attachment # 1 – Water Section Operations Update – May to August 2016

Respectfully submitted,

Meg Boyd

Meg Boyd
Compliance & Efficiency Coordinator

Reg Russwurm

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Town of The Blue Mountains
Water Section Operations Update
May to August 2016

Introduction

Ensuring the safety and quality of the Town’s drinking water system is not only the responsibility of the Water Operators who operate and maintain the system but also the Members of Municipal Council and Municipal Officials who exercise decision-making authority regarding the system.

The purpose of this report is to provide Council with a brief overview of the Town’s drinking water system and to report on water quality issues for the period of May to August 2016.

This report will address the following:

- Raw, Treated and Distribution Water Quality Data
- Drinking Water Quality Management System Update
- Staff Training
- Water Treatment Plant and Water Booster Station Maintenance Summary
- Distribution System Summary
- Summary of Plant Flows
- Watermain Break Summary
- Incidents of Adverse Water Quality
- Water Quality Concerns / Resident Complaints

System Information

Drinking Water System Number:	220001762
Drinking Water System Name:	The Blue Mountains Drinking Water System
Drinking Water System Owner:	Town of The Blue Mountains
Drinking Water System Category:	Large Municipal Residential
Water Treatment Subsystem Class:	Class 2 Certificate No. 1758
Water Distribution Subsystem Class:	Class 3 Certificate No. 1759
Municipal Drinking Water License:	111-101
Municipal Drinking Water Permit:	111-201

Raw, Treated and Distribution Water Quality Data

Ontario Regulation 170/03 specifies guidelines for the number of samples to be taken, the frequency of sampling and the actions to be taken if any of the sample results indicate adverse water quality.

Schedule 10 of Ontario Regulation 170/03 requires weekly sampling and testing for E.Coli, Total Coliform and Heterotrophic Plate Count (HPC).

Weekly samples are collected for raw and treated water from the Thornbury Water Treatment Plant (WTP) and analyzed by an accredited laboratory.

Overviews of the raw and treated water sampling data for the period of May to August 2016 are presented in Tables 1 and 2 respectively.

Table 1 – Raw Water

Parameter	Result Range (Min – Max)	Parameter Limit
E.Coli¹	0 to 17	N/A
Total Coliform²	0 to 37	N/A

Table 2 – Treated Water

Parameter	Result Range (Min – Max)	Parameter Limit
E.Coli	0	0
Total Coliform	0	0
HPC³	0 to 4	N/A

¹*Escherichia Coli (E.Coli)* is a fecal coliform and should not be detected/present in any drinking water sample.

²The presence of any total coliform bacteria in water leaving a treatment plant or in any treated water immediately post treatment signifies inadequate treatment and is unacceptable.

³ Schedule 10 of Ontario Regulation 170/03 requires testing for general bacteria population expressed as colony counts on HPC (Heterotrophic Plate Count). There are no reporting or corrective action requirements specified in Ontario Regulation 170/03 following HPC test results. HPC's are a good indicator of overall drinking water quality but not water safety.¹

Drinking water quality is further monitored throughout the distribution system by a comprehensive sampling and analysis program involving weekly sampling at designated sampling stations as well as reservoirs and booster stations.

An overview of the distribution sampling data for the period of May to August 2016 is presented in Table 3:

Table 3 – Distribution

Parameter	Number of Samples	Result Range (Min – Max)	Parameter Limit
E.Coli	183	0	0
Total Coliform	183	0	0
HPC¹	144	0 to 18	N/A

¹ MOECC "Technical Support Document for Ontario Drinking Water Standards, Objectives and Guidelines," 2003 (revised 2006), 25 May 2015 <<http://www.ontario.ca/document/technical-support-document-ontario-drinking-water-standards-objectives-and-guidelines>>

Drinking Water Quality Management Standard Update

Brian O'Reilly and Amanda Healy, acting as the Town's Internal Auditors, conducted an assessment of the Quality Management System (QMS) to ensure the Town's drinking water system meets the requirements of the DWQMS. The Internal Auditor's identified fourteen (14) Opportunities for Improvement (OFI). Staff have addressed the OFI's and these will be verified by the Internal Audit during their next Audit scheduled in 2017.

Staff Training

In accordance with Ontario Regulation 128/04, all Water Treatment and Distribution Operators possess operating licenses appropriate to the class of facility where they are employed. As the Town's distribution system is a Class 3 subsystem, Operators are required to complete a minimum of 26 hours of on the job practical training and 14 hours of formal Continuing Education Units (CEU) training per year.

A summary of the courses attended from May to August 2016 by Operators is provided in Table 4:

Table 4 – Training Overview

Operator Name	Training Course Attended
Stephanie Cole	<ul style="list-style-type: none"> • Audiology Training
Rob Gilchrist	<ul style="list-style-type: none"> • Audiology Training • Manager for Success: Effective Utility Leadership Practices – Office of Water Programs
Scott Hill	<ul style="list-style-type: none"> • Audiology Training
Scott Marritt	<ul style="list-style-type: none"> • Protecting Water in the Distribution System • Disinfection and De-chlorination • Audiology Training
Don McArthur	<ul style="list-style-type: none"> • Carson Plumbing Supply Demo Days
Kevin McGuire	<ul style="list-style-type: none"> • Protecting Water in the Distribution System • Disinfection and De-chlorination • Audiology Training
Darren Shilvock	<ul style="list-style-type: none"> • Audiology Training

Water Treatment Plant and Water Booster Station Maintenance Summary

The following table provides a breakdown of the maintenance performed at the Water Treatment Plant from May to August 2016.

Table 5 – Water Treatment Plant and Booster Station Maintenance Summary

Maintenance Performed	Number Completed
Monthly maintenance duties at Booster Stations and Water Treatment Plant	32
SCADA Integrator programmed Camperdown tower mode	1
Installed new chlorine analyzer on treated water at Water Treatment Plant	1
Installed new motor on Highlift # 2 at Water Treatment Plant	1
Painted pumps and piping at Water Treatment Plant	1
Repaired and painted Water Treatment Plant entrance steps	1
Replaced Water Treatment Plant clearwell level transmitter	1
New cooling hoses and clamps on diesel generator at Arrowhead Road Booster Station	1
Bollards installed at Mountain Road Booster Station	1
Two new drives on Reverse Filtration pumps at Water Treatment Plant	1
Installed relays and timers on Reverse Filtration Pump capacitors at Water Treatment Plant	1
Annual inspection of backflow preventors	1
Replaced dosimeter board on UV # 2 at Water Treatment Plant	1
New chlorine pumps installed at Mountain Road Booster Station and Arrowhead Road Booster Station	1
Capacitors replaced on lowlift pump drives 1,2 and 3 at Water Treatment Plant and relay on each capacitor rack	1
Tree removal at Arrowhead Road Booster Station and Swiss Meadows Standpipe	1
Sub drain installed at parking lot behind Water Treatment Plant	1
Replaced ballast # 2 on UV # 2 at Water Treatment Plant	1

Guards installed on highlifts at Arrowhead Road Booster Station to prevent water splashing from packing	1
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Distribution System Summary

The following table provides a breakdown of the Water Meter Field Service calls for May to August 2016:

Table 6 – Water Meter Field Services Summary

Nature of Call	Number of Calls
Frozen Meter repairs	4
Replace/Repair Jammed Meter	13
Replace/Repair Remote Touchpads	21
Repair Meter Other (leaks, reversed, etc.)	5
Meter Inspections (re-inspections, renovations, new construction)	57
Billing Verification, Hand Deliveries (notices, bills)	218
Install/Repair Radio Units	15
Customer Meetings (usage, pressure, complaints, etc.)	22
Closing Readings	186
Water Turn On	6
Meetings with contractors, business owners, site management (backflow requirements, unauthorized connections, losses etc.)	15

The following table provides a breakdown of the Water Distribution Work Orders completed for May to August 2016:

Table 7 – Distribution Work Orders

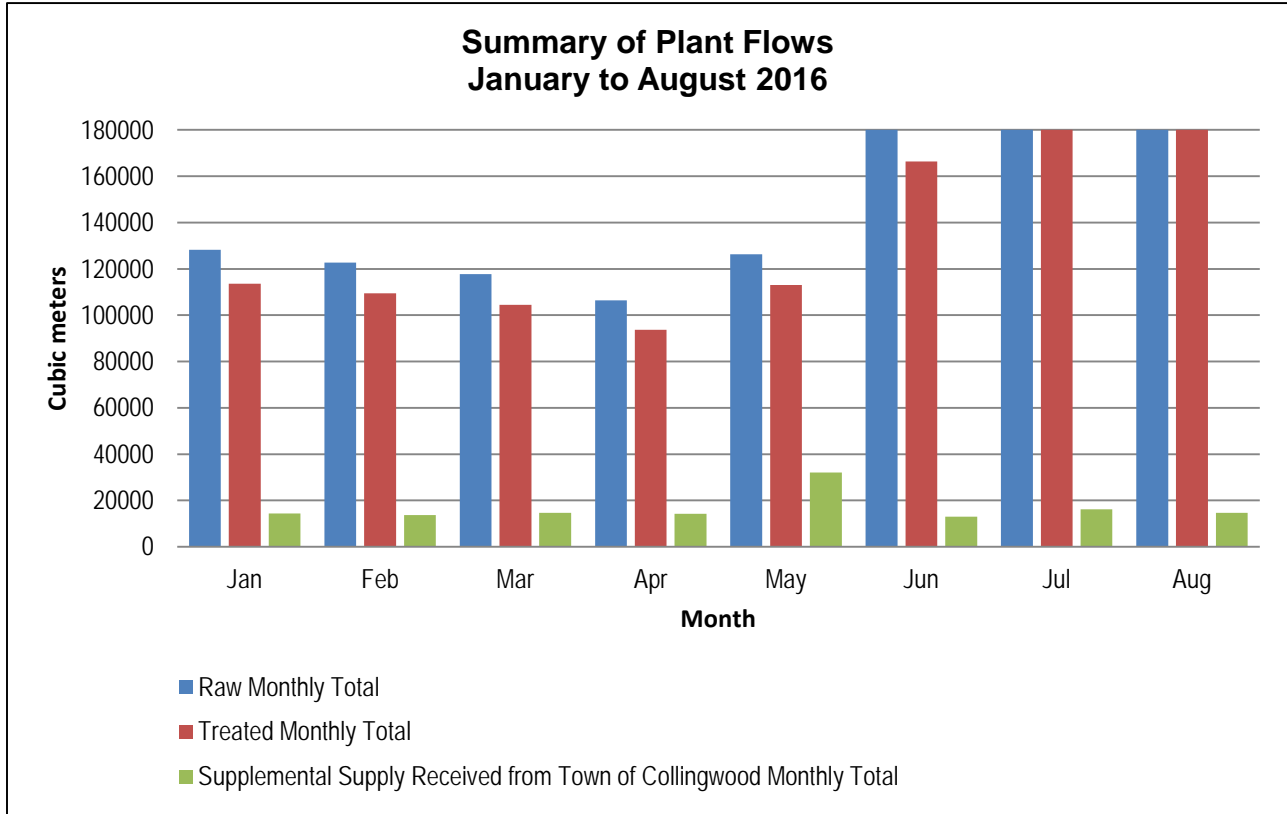
Work Order Description	Number Completed
Watermain service repairs	3
Valves operated	463
Valves replaced / new	4
Outstanding deficiencies arising from fire hydrant inspections	2
Service connection repairs completed	19
Service connection repairs outstanding	2

Service connection installations	5
Pressure reducing valve inspections	13
Air relief valve inspections	59
Spring Hydrant Flushing Program	488
Dead End Flushing Program – Number of Fire Hydrants Flushed	292
Water and Sewer locates completed	331
Automatic Flushing Stations – Weekly check of chlorine residuals	378
Auto Flusher Installations / Repairs	5
Number of days with GPS Unit	9
Number of days with Tower repairs	6
Dig Clean ups	6
Number of days with Vacuum Unit Repairs	3
Number of Fire Hydrants painted	242
Meter / Valve Chamber Inspections	6
New construction development	3

Summary of Plant Flows

A summary of the WTP Raw, Treatment and supplemental flow supply received from the Town of Collingwood is presented in Graph 1:

Graph 1:

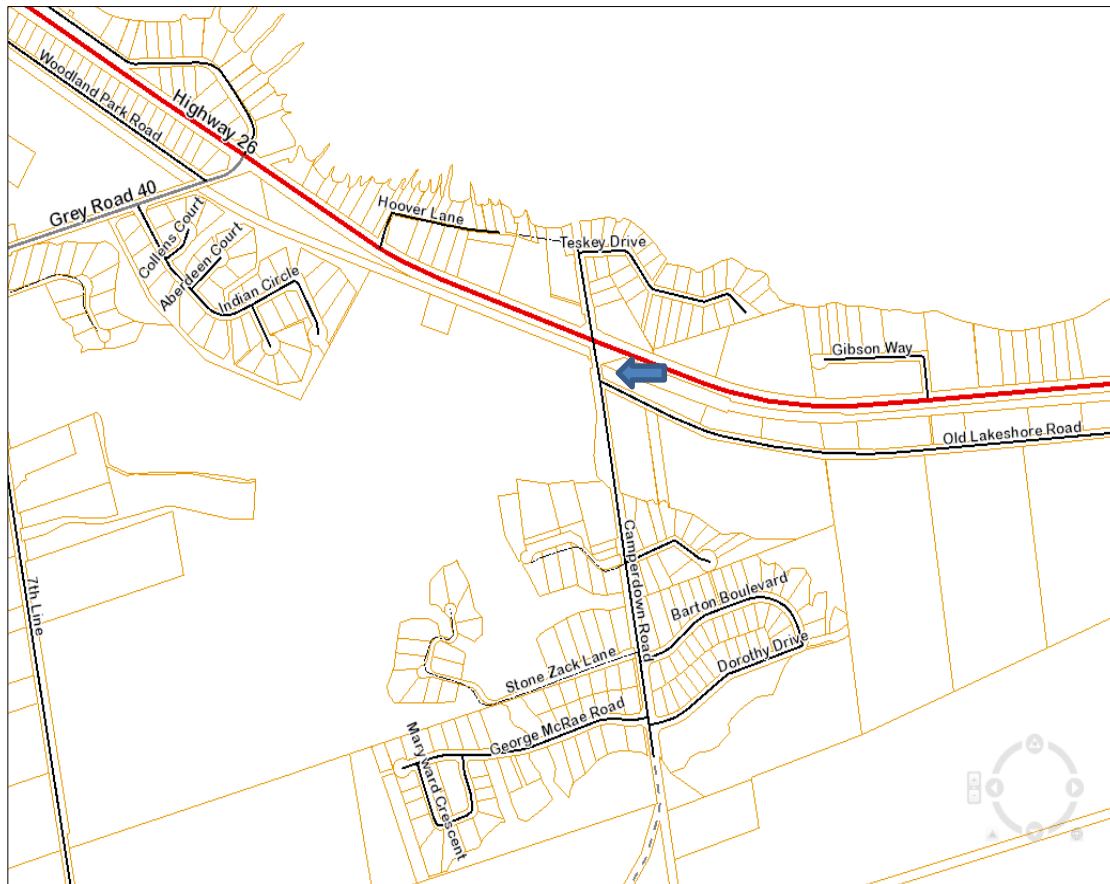


Watermain Break Summary

Watermain breaks are typically reported by the public, Town Staff or discovered during visual inspections by Operators. In most instances, watermain breaks are repaired by Operators and, at times, with the assistance of outside contractors or Staff from the Town's Roads Department.

For the period of May 1 to August 31, 2016, there was one watermain break as summarized below:

On June 7, 2016, the On-Call Operator received various alarms from the Water Treatment Plant which indicated that there was watermain break in the distribution system. Upon investigation a watermain break was discovered on Old Lakeshore Road. A small leak at the saddle caused an approximate 5 foot long split in the watermain. Operators repaired the watermain same day with minimal disruption to residents.



Incidents of Adverse Water Quality

This section describes all Adverse Water Quality Incidents (AWQI). This term refers to any treated water test result that does not meet a provincial water quality standard or a situation where disinfection of the Town's drinking water may be compromised. A single AWQI does not necessarily mean that the system's drinking water is unsafe – it indicates that, on at least one occasion, a water quality standard was not met.

The Town's drinking water system is operated in accordance with Ontario Regulation 170/03 and Operators follow the direction of this regulation when dealing with incidents of adverse drinking water. There were no incidents of adverse drinking water quality for the period of May 1 to August 31, 2016.

Water Quality Concerns/ Resident Complaints

Staff record information relating to water quality issues on the Resident Water Quality Concern Form. If required, Operators attend the location of concern to collect samples or assess the nature of the concern.

The ongoing analysis of the water quality data is useful in determining if the water quality is changing throughout the distribution system over time. As an example, taste and odour complaints may indicate that the watermain in a particular area is deteriorating.

A summary of the water quality concerns received during the May to August 2016 period is included in Table 8 below.

Table 8 – Water Quality Concerns

Water Quality Concern	Dates	Number of Occurrences
Overall Water Quality	June 15, 22	2
Low Water Pressure	May 20, August 2	2
Cloudy Water	May 5	1
Discoloured Water	July 12	1
No Water	July 14	2